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ABSTRACT

This document briefly describes the objectives, procedures, accomplishments, and findings of a project to provide inservice training for secondary vocational agriculture teachers in Texas. It then details a survey of the 933 teachers attending the resulting State Professional Improvement Conference for Teachers of Agricultural Science. The survey was concerned with the changes in secondary agricultural science from a traditional production agriculture-based, full-year curriculum, to a more science-oriented, semester-based curriculum. Indicating the extent to which they agreed or disagreed, 933 teachers responded to 33 statements suggesting possible effects of curricular changes, Supervised Occupational Experience Programs, enrollment, program administration, teacher inservice needs, and methods used to bring about the changes. The questionnaire consisted of two parts. The first section contained questions pertaining to teacher perceptions of the proposed curricula changes. The second portion was designed to collect data on personal and situational characteristics. A five-point Likert-type scale was employed for measurement purposes. Descriptive statistics, correlational statistics, and discriminant analysis were calculated. The study found that more experienced teachers tended to oppose the new curricula. Also, teachers who were favorable toward changes felt they had input in the process, whereas those who opposed the changes did not. The survey instrument is included in the document. (NLA)

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AUGUST 1, 1988

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PROJECT DIRECTOR

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SECONDARY VOCATIONAL AGRICULTURE INSERVICE TRAINING

PROBLEM AREA

Teachers in Texas Schools need in-service training to assist with the education of the students of agricultural science. The in-service training must help teachers keep current in the various areas that they use to improve the mental and physical development of their students. This project provided support of the total agricultural science program.

GOALS AND OBJECTIVES OF THE PROJECT

The objectives of the project were:

1. To provide in-service training for the secondary agricultural science teachers in the state of Texas.

2. To provide assistance to state staff in-service workshops, youth activities, and adult education activities.

3. To provide assistance with state in-service teacher workshops.

4. To provide assistance to the special population groups (handicapped, disadvantaged, limited English proficiency, persons in need of retraining, persons in correctional institutions, single parents/displaced homemakers, persons in non-traditional vocations, displaced workers, or persons in programs to eliminate sex bias/stereotyping).

5. To provide travel to personnel from the teacher education institutions to assist the state director in conducting the agricultural science program.

PROJECT DESIGN AND PROCEDURES FOLLOWED

Dr. Herman D. Brown of Texas A&M University coordinated the project. Included in the coordination was: selection of the advisory committee; the advisory committee meeting; planning and implementing the project; working with TEA to determine possible programs; and assistance in the evaluation of the project.

The Department of Agricultural Education at Texas A&M University has a long history of cooperation with institutions and organizations involved in agricultural education. Local school districts, Texas Education Agency staff in Agricultural Education, Occupation

Education and Technology, and business and industry personnel in agriculture were the primary cooperators in this project. The Instructional Materials Services center provided additional coordination necessary for the successful completion of this project.

Specific procedures followed included:

1. Texas Education Agency personnel, the Director of Agricultural Education and the teacher educator institutions in agricultural education assisted in planning, implementing, and evaluating the project.

2. The project was developed in consultation with an advisory committee.

3. Materials and project programs provided for modifications to meet the needs of students (handicapped, disadvantaged, limited English proficiency, persons in need of retraining, persons in correctional institutions, single parents/ displaced homemakers, persons in non-traditional vocations, displaced workers, or persons in programs to eliminate sex bias/stereotyping), and will provide for sex equity.

4. Procedures and a time-table was developed to evaluate and report achievement of the project.

5. Quality control was monitored throughout the development of the project by the advisory committee.

6. Project professional staff, appropriate Texas Education Agency officials, and the advisory committee were responsible for planning and evaluating the project.

7. Agricultural science teachers assisted in evaluating the project activities in which they participated. Evaluations conducted by TEA staff.

8. Computer application was included where appropriate. Computer technology proved to be very beneficial to the project.

To ensure successful achievement of the project objectives, office facilities, equipment, materials and supplies for project not included in the itemized budget and fiscal pages of this project application were furnished by Texas A&M University. Cooperating local school districts and other teacher training institutions provided adequate facilities, equipment and supplies necessary to complete the objectives in which the cooperating schools are active participants.

RESULTS AND ACCOMPLISHMENTS OF THE PROJECT

A series of activities were conducted during the year as requested or approved by the Texas Education Agency State Director of Agricultural Education Several of the activities are as follows:

1. Several of the faculty in agricultural education and staff from Instructional Materials Service conducted workshops during the annual teachers conference in Houston. These pre-conference workshops included AGSC 101 and 102.

2. Richard Norris conducted a survey of teachers on school acceptance of the new courses in agricultural science for 1987-88. A copy of the survey instrument and survey results are enclosed.

3. The project supported two programs for the Area III Mid-Winter Conference with programs on AGSC 334, Equine Science and AGSC 241, Food Technology. The programs were attended by approximately 120 agricultural science teachers.

4. The State FFA Judging Contest Committee approved the new contest rules for 1989, 1990, and 1991. IMS printed approximately 2200 copies for free distribution to teachers during the annual conference in Ft. Worth.

5. At the request of TEA, teacher educators assisted in the selection of the Outstanding Young Farmer member and attended the YF Leadership Conference in Lubbock.

6. An IMS staff member visited the Department of Agricultural Education at Texas Tech University to discuss ways and means of improving instructional material for teachers. Also, a visit was coordinated with Vocational Homemakers Printing Center to seek new ideas on printing.

7. Project paid travel and per diem of teacher educators to assist state director in conducting State FFA Degree check. Letters of request on file.

8. IMS printed additional copies of Basic Curriculum Guide for use in advisory committee meetings, for distribution to new teachers, and for distribution to teacher educators.

9. The project supported the development and printing of a proposed point guide as a supplement to the supervised agricultural experience program. This involved the construction of an alternative point system for 23 semester courses. This material will serve as a basis for a pilot program to be supervised by the TEA State Director of Agricultural Education. All material printed by IMS.

10. Teacher educators assisted in conducting the annual conference for agricultural science teachers by organizing workshops and serving as the co-chairperson.

11. Teacher educators assisted State Director of Agricultural Education when requested by serving on committees, making formal presentations to educational organizations, and developing programs for in-service meetings.

Reports and materials generated by the project were analyzed in collaboration with appropriate Texas Education Agency officials, project specialists, teachers and school administrators participating in the project.

EVALUATION PROCEDURES AND FINDINGS

Evaluative instruments were prepared and utilized by advisory committee members, consultants, and others directly involved.

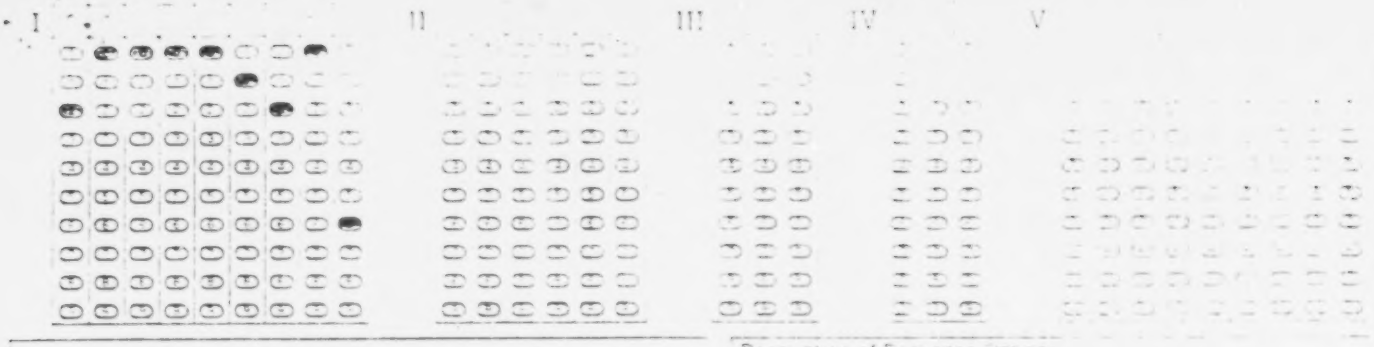
The advisory committee served in a formative evaluation role (as well as advisory) throughout the project. The committee reviewed and provided advice to project staff on 1) progress reports, 2) project progress and direction, and 3) the final report.

Project staff worked closely with TEA staff in Agricultural Education, Department of Occupational Education and Technology, to ensure that the project progressed satisfactorily.

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The in-service training benefited the agricultural science program in Texas. The teacher educator institutions in agricultural education participated in this project. Each teacher education institution represented and assisted state advisor of the Future Farmers of America (FFA) and Young Farmers of Texas (YFT) annual leadership conferences, attended and assisted state staff with area in-service workshops, state in-service teachers workshops, and with any in-service activities as requested by the director of agricultural education.

Future projects should be more specific as to the involvement of the teacher education institutions and the programs to be supported by the project.



Please respond to the following questions pertaining to your personal characteristics and those of the department in which you teach.

Description of Response Options

1=
2=
3=
4=
5=
6=
7=
8

PERSONAL CHARACTERISTICS:

1. Sex: 1 - Male, 2 - Female

2. **Number of schools in which you have taught agricultural science.**

3. Highest education level: 1 - B.S., 2 - B.S.+, 3 - Masters, 4 - Masters+, 5 - Doctorate

4. **Number of years in which <u>you</u> were enrolled in high school vocational agriculture. (answer 8 if NONE)**

5. Number of years in which <u>you</u> were an active member of the FFA. 1 - one, 2 - two, 3 - three, 4 - four or more, or 8 - NONE

DEPARTMENTAL CHARACTERISTICS:

1. Size of your school: 1 - 1A, 2 - 2A, 3 - 3A, 4 - 4A, and 5 - 5A

2. **School Location by Population: 1 - Urban (above 10,000), 3. Rural (below 2,500) 2 - Urban/Rural (2,500-10,000),**

3. Program Emphasis: for each of the areas listed below, answer 1 if taught in current program, or 2 if it is not taught.

Production Agriculture

Coop Agriculture

Pre-employment lab - Meat Processing

Pre-employment lab - Horticulture

Pre-employment lab - Farm Power and Machinery

Pre-employment lab - General Agricultural Mechanics

Pre-employment lab - Forest Products Harvesting

Pre-employment lab - Agricultural Resources

Pre-employment lab - Feedlot

PLEASE TURN TO THE BACK

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	○	○	○	○	○	○	○	○
	○	○	○	○	○	○	○	○

In my agricultural science program during the 1987-88 school year, I plan to:

Continue offering the same curriculum as in the past ____
Adopt the new curriculum on a limited basis ____
Adopt the new curriculum totally ____

Explain: _____

_____

_____

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STUDENTS IN AG 87-88: YRS. TEACHING: TODAY A/S AREA [redacted] LEAVE BLANK.

I II III IV V

Using the scale to the right, please respond to each of the phrases that complete the following statement:

~~WHEN~~ FULLY ~~IMPLEMENTED~~, ~~THE~~

WHEN ~~IN PLACE~~, THE NEW AGRICULTURAL SCIENCE CURRICULUM WILL:

Description of Response Options
1= Strongly Disagree
2= Disagree
3= Neither Agree nor Disagree
4= Agree
5= Strongly Agree
6=
7=
8=

1. cause an increase in statewide agricultural science enrollment.
2. cause an increase in minority enrollment in agricultural science.
3. cause an increase in female enrollment in agricultural science.
4. cause an increase in non-traditional student enrollment in agricultural science.
5. encourage students to enter and leave the agricultural science program at will, rather than be continuously enrolled.
6. allow students to take agricultural science courses without any genuine commitment to the agricultural program as a career option.
7. cause the average scope (size) of SOE projects to increase.
8. cause the percentage of students completing SOE projects per year to increase.
9. cause SOE projects to be unmanageable for the agricultural science teacher due to their diversity.
10. cause a decrease in traditional production SOE programs.
11. endanger the "stock show" programs in agricultural science departments.
12. cause agricultural programs to become so diversified that the instructors will be unable to manage them effectively.
13. encourage instructors to seek community advice to determine which courses to include in the agricultural science program.
14. create the need for additional "paperwork" involving program administration.
15. cause instructors to spend an excessive amount of time in developing instructional materials and lesson plans.
16. cause an increase in uniformity of agricultural science programs across the state.
17. create a demand for more inservice education.
18. cause inservice education to become more specialized than it is presently.
19. cause attendance at inservice education programs to increase.
20. cause agricultural science instructors to undergo extensive retraining in order to teach the new curriculum effectively.

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STUDENTS IN AG 87-88 YRS. TEACHING TOOK AG AREA [redacted] LEAVE BLANK

Using the scale to the right, please respond to each of the phrases that complete the following statement:

~~WHEN~~ FULLY ~~IMPLEMENTED, THE~~

WHEN ~~IN PLACE~~, THE NEW AGRICULTURAL SCIENCE CURRICULUM WILL:

Description of Response Codes

1 Strongly Disagree
2 Disagree
3 Neither Agree nor Disagree
4 Agree
5 Strongly Agree

1. cause an increase in statewide agricultural science enrollment.	
2. cause an increase in minority enrollment in agricultural science.	
3. cause an increase in female enrollment in agricultural science.	
4. cause an increase in non-traditional student enrollment in agricultural science.	
5. encourage students to enter and leave the agricultural science program at will, rather than be continuously enrolled.	
6. allow students to take agricultural science courses without any genuine commitment to the agricultural program as a career option.	
7. cause the average scope (size) of SOE projects to increase.	
8. cause the percentage of students completing SOE projects per year to increase.	
9. cause SOE projects to be unmanageable for the agricultural science teacher due to their diversity.	
10. cause a decrease in traditional production SOE programs.	
11. endanger the "stock show" programs in agricultural science departments.	
12. cause agricultural programs to become so diversified that the instructors will be unable to manage them effectively.	
13. encourage instructors to seek community advice to determine which courses to include in the agricultural science program.	
14. create the need for additional "paperwork" involving program administration.	
15. cause instructors to spend an excessive amount of time in developing instructional materials and lesson plans.	
16. cause an increase in uniformity of agricultural science programs across the state.	
17. create a demand for more inservice education.	
18. cause inservice education to become more specialized than it is presently.	
19. cause attendance at inservice education programs to increase.	
20. cause agricultural science instructors to undergo extensive retraining in order to teach the new curriculum effectively.	

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SURVEY INSTRUCTIONS

PLEASE USE PENCIL!

Turn to the first survey form. Roman numeral I should already be filled in for you. Make sure the number in that box begins with a "1" as in the example below. (If not, check your other survey form.) Answer the following questions using the remaining II-V grids. Refer to the examples below as often as needed.

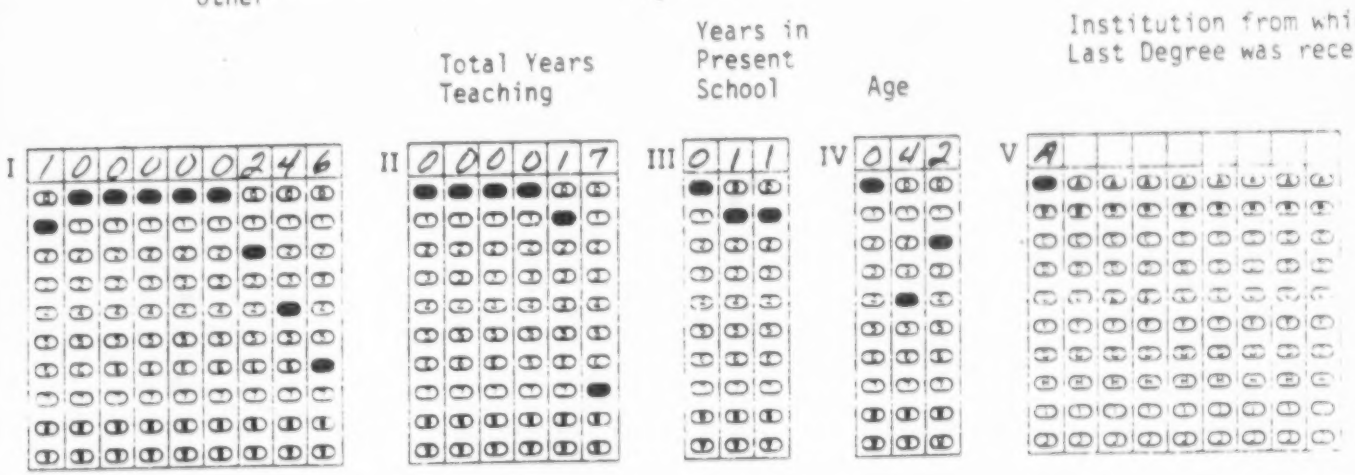
Grid II - enter the number of years that you have been teaching agricultural science/ vocational agriculture in Texas. (See Example: Teacher has taught 17 years.)

Grid III- enter the number of years that you have been teaching agricultural science/ vocational agriculture at your present school. (See Example: Teacher has taught in present school for 11 years.)

Grid IV - enter your present age. (See Example: Teacher is 42 years old.)

Grid V - Using the key below, enter the code letter for the institution from which your LAST degree was received. Place the letter in the first box of the grid. (Example: Teacher received last degree from East Texas State University.)

East Texas State University -A
Prairie View A&M Univeristy -B
Sam Houston State Univeristy -C
Southwest Texas State Univer. -D
Stephen F. Austin State Univ. -E
Tarleton State University -F
Texas A&I University -G
Texas A&M University -H
Texas Tech University -I
Other -J


I 1 0 0 0 0 0 2 4 6
II 0 0 0 0 1 7
Total Years Teaching
III 0 1 1
Years in Present School
IV 0 4 2
Age
V A
Institution from which Last Degree was receiv

Complete the remainder of the first survey form before going on to the instructions for the second form.

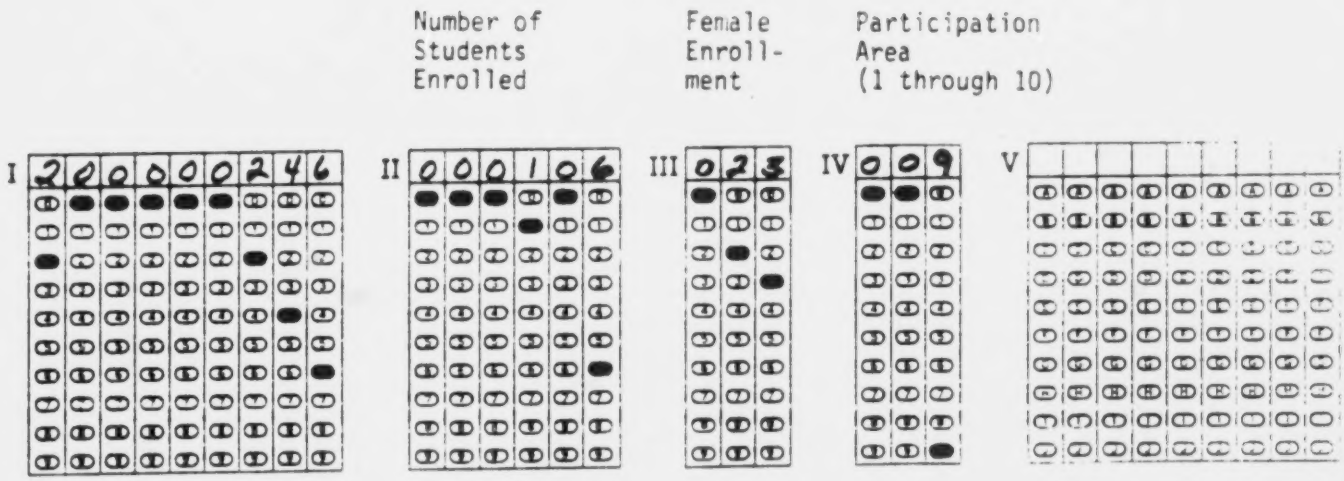
SURVEY INSTRUCTIONS

Once you have completed the first survey form, check to see that the number in grid I begins with a "2". Next, answer the following questions using grids II-IV. Grid V will not be used. Refer to the examples below as needed.

Grid II - enter the number of students currently enrolled in the agricultural science program at your school. If you are not exactly sure of the number please try to estimate it as closely as possible. (See Example: current program has 106 students enrolled.)

Grid III- enter the number of females enrolled in the current agricultural science program. Again, if the exact number is not known please estimate. (See Example: current program has 23 females enrolled.)

Grid IV - enter the Area (1 through 10) in which your program participates. (See Example: program is located in Area 9.)



Please complete the remainder of the form following the directions given on it.

THANK YOU FOR YOUR COOPERATION!!

Perceptions of Secondary Agricultural Science Teachers
Toward Proposed Changes in Agricultural Curricula in Texas

Richard James Norris

Introduction

Vocational agriculture faces three challenges today which may influence major changes if the program is to remain a part of the secondary school offerings. Burton (1986) stated that less than 3 percent of today's labor force are farmers, but over 20 percent of U.S. workers are employed in agriculturally related careers. Students enrolled in vocational agriculture can no longer be assured of a career in production agriculture; instead, they must look to the agribusiness portion of the industry for employment. Another challenge facing vocational agriculture has come about as a result of the "back to the basics" movement in education, epitomized by the 1983 report A Nation at Risk. Because of increased requirements for high school graduation, students often do not have time in their schedules for four full years of vocational agriculture, or any other elective. The final challenge lies in the area of enrollment. Enrollment in vocational agriculture nationwide has dropped at an alarming rate during the past decade

(Participation in Selected FFA Activities, 1986, p.46). Eudy (1986) cited these facts as a mandate for changes in Texas' vocational agriculture curricula if the program is to survive into the next century.

Agricultural education personnel in Texas recently began work to revitalize the curriculum in vocational agriculture. In 1986, "Vocational Agriculture" was renamed "Agricultural Science," a change to relieve some of the negative reaction toward the term "vocational." But, more importantly, state staff, teacher educators, and representatives of teachers of agricultural science across the state began to restructure courses for students interested in a career in agriculture. Semester courses, which would allow the student a chance to specialize in one area of agriculture, or to gain a wide range of experiences as a preparation for college studies, were proposed to replace Production Agriculture I, II, III, and IV courses. The major question, then, was, "How do the instructors, not directly involved with the change process, view the proposed changes?" Do they see the need for change? Are the changes taking place viewed as threatening? These were important questions to be answered if the change was to be brought about quickly and effectively, and if acceptance of the change is to be realized.

This study concerned the changes in curricula taking place in agricultural science in Texas. Teachers were being directed to change from a "traditional" production agriculture based, full-year curriculum, to one more science oriented and offered on a semester basis.

Purpose

The purpose of this study was to determine if relationships existed between characteristics of teachers of agricultural science and their current programs, and perceptions of these teachers toward proposed changes in the agricultural science curricula in Texas.

Methodology

During the opening general session of the State Professional Improvement Conference for Teachers of Agricultural Science on August 12, 1987, 933 teachers were surveyed from a population of 1415. Indicating the extent to which they agreed or disagreed, teachers responded to 26 statements suggesting possible effects of curricular changes on FFA, Supervised Occupational Experience Programs (SOEP), enrollment, program administration, and teacher inservice needs and nine statements concerning the methods used to bring about the changes.

Descriptive statistics were used for reporting the characteristics of teachers and their programs and teachers' perceptions. Correlational statistics were calculated to determine if relationships existed between characteristics of teachers and programs and teachers' perceptions. Discriminant analysis was used to determine the relationships among teachers' perceptions toward proposed changes, their "free choices," and their "actual choices" concerning the new curriculum.

Source of the Data

Because the study dealt with current changes taking place in curricula of agricultural science in Texas, the population for the study was limited to secondary teachers of agricultural science during the 1987-88 school year. The number of teachers in the population was approximately 1400 (Texas Education Agency, 1987). Nine hundred and thirty-three teachers in attendance at the opening meeting of the Annual Conference of Texas Teachers of Agricultural Science, August 12, 1987, Houston, Texas, were surveyed. During the opening session of the conference, 933 teachers were surveyed. This sample of 933 was used to measure the perception of teachers toward the changes in curricula (Krejcie & Morgan, 1970, Borg & Gall, 1983).

Instrumentation

The questionnaire used for this study consisted of two parts. The first section contained questions pertaining to teacher perceptions of the proposed changes taking place in the agricultural science curricula. The second portion was designed to collect data on personal and situational characteristics (e.g., age, sex, degrees held, number of years teaching, size of program). Teachers responded to 35 statements, indicating the extent to which they agreed or disagreed with each statement. A five-point, Likert-type scale was employed for measurement purposes (Reneau & Roider, 1986). Responses to individual items were summed to develop seven scales as follows:

1. Perceptions of teachers regarding effects of curricular changes on FFA.
2. Perceptions of teachers regarding effects of curricular changes on non-vocationally oriented students.
3. Perceptions of teachers regarding effects of curricular changes on SOEP.

4. Perceptions of teachers regarding effects of curricular changes on enrollment in agricultural science.

5. Perceptions of teachers regarding effects of curricular changes on program administration.

6. Perceptions of teachers regarding effects of curricular changes on teacher inservice needs.

7. Perceptions of teachers regarding the methods which were used to bring about the changes in curricula.

Analysis of the Data

Descriptive statistics (e.g., frequencies, percentages, means, and standard deviations) were used for reporting the characteristics of teachers and of their programs. Perceptions were described similarly; in addition, however, a measure of internal consistency (Cronbach's coefficient alpha) was employed to assess the scaling procedure used to quantify perceptions (Heimgarter & Foster, 1981).

Correlational statistics were calculated to determine if relationships existed between characteristics of teachers and programs and teacher's perceptions.

Major Findings

After complete analysis of the data, the following are the conclusions of this study. Each conclusion is followed by the major findings which supported it.

1. The experience of the teacher was negatively related to teachers' perceptions of the effects of the new curriculum on enrollment, SOEP, and FFA. The findings which support this conclusion were that age, years of teaching, and tenure at present school had statistically significant negative relationships with teachers' perceptions toward effects on enrollment, SOEP, and FFA.

2. The number of schools in which the teacher had worked was negatively related to teachers' perceptions toward all aspects of the curricular change. Statistically significant negative relationships existed for teacher perceptions of effect on SOEP, FFA, and toward the change process. Moreover, as the number of schools in which the teacher had taught increased, the perceptions became more negative for all areas concerning the curricular changes.

3. A background as a student in vocational agriculture or as a member of the FFA was negatively related to teachers' perceptions toward the new curriculum. As the number of years that teachers had spent in vocational agriculture or as a member of the FFA increased, perceptions of the effects of the new curriculum became more negative for all scales.

4. The size of the school in which the teachers taught, size of community in which the school was located, the number of students in the program, and number of females in the program were related factors to teachers' perceptions. As each of these variables increased, the more positive were the perceptions of teachers concerning the effect of the new curriculum on all aspects of the programs.

5. Female teachers tended to be more positive concerning the changes than were their male peers; however, other variables confounded with sex were age, school size, community size, and number of students.

6. The state supervisory area in which the teacher was employed influenced their perceptions of effects of the new curriculum, and of the change process. Teachers from Areas II and IV were consistently more negative toward the new curriculum, in all areas, than were teachers from other areas. Likewise, teachers from Areas V, VII, and X

tended to be more positive than were other teachers in their perceptions of the effects of the new curriculum.

7. The institution from which the teacher received his/her last degree had little influence on perceptions toward the new curriculum.

8. The level of education of the teacher was not related to his/her perceptions toward the effects of the new curriculum. Teachers with a B.S. degree tended to perceive the changes in the same manner as did those teachers with a master's degree or above.

9. Teacher's perceptions toward the "change process" (need for the change, manner in which the change was managed, amount of teacher input into the change, etc.) was the single best predictor of the teacher's "free choice" and "actual decision" concerning adoption of the change.

10. "Free choice" and "actual choice" were related; however, only a relatively small portion of the variance in "actual decision" was explained by "free choice" decision. In other words, factors other than the teachers' own decision were more important than was the teachers' choices in determining 1987-88 curriculum in agricultural science.

Discussion

This study supported much of the literature reviewed concerning the change process and adoption of innovations as teachers who were more experienced (older, more years of teaching experience, longer period of tenure in present school, or have taught in several different school systems) tended to oppose the new curriculum. Also, teachers who felt that they had input into the change and felt confidence in the manner in which the change had been brought about were favorable toward the change

even if they had reservations about how parts of their programs might be effected. Many of the teachers who opposed the changes felt that there had been little opportunity for teacher input into the new curriculum, and that these changes were being forced on them.